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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/496,656
Filing Date: February 03, 2000
Appellant(s): SAITO ET AL.

MAILED
MAR 21 2007
GROUP 1700

Christopher Rauch
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/30/06 appealing from the Office action
mailed 06/22/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 6,307,609	Gibbons	10-2001
US 5,998,101	Park	12-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 8-11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibbons (US 6,307,609) in view of Park (US 5,998,101).

Regarding claim 8, Gibbons teaches a liquid crystal display (column 1, lines 35-40) comprising a pair of substrates being aligned via a predetermined distance therebetween (assembled with orthogonal orientation of the optically generated alignment direction, forming a cell with a cell gap or thickness, column 12, lines 30-35), with at least one of them having thereon a film for liquid crystal orientation (alignment layer, column 12, lines 28-31), and a liquid crystal layer put in the distance between the substrates (column 12, lines 30-40), wherein the film is a UV-reactive film (photosensitive alignment layer, column 11, lines 60-65) and is exposed to first polarized UV rays (ultraviolet light, column 10, lines 25-35), while the film is on the substrate aligned parallel to a reference plane, and next to second polarized UV rays after the substrate is rotated on the reference plane (substrates are then rotated 90 degrees about the normal to the place of the substrates and then exposed a second time by the optical exposure system, column 11, lines 60-70).

Gibbons fails to teach that the substrates of the liquid crystal display are transparent.

However, Park teaches that a conventional liquid crystal display cell is composed of two transparent substrates (upper and lower glass electrodes, column 1, lines 30-40), for the purpose of providing minimum interference to transmitted light.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used transparent substrates in the liquid crystal display of Gibbons, in order to provide minimum interference to transmitted light, as taught by Park.

Gibbons fails to teach that the ratio of exposure energy during the first polarized UV rays exposure to that of the second polarized UV rays exposure is 5:1, or that the liquid crystal display device has a pre-tilt angle greater than or equal to 3.5 effected by the exposure to the first polarized UV rays and the second polarized UV rays.

However, Gibbons provides examples wherein the relative ratio of exposing energies is 4:1 between the first and second exposures (4/1, column 12, lines 20-30), and that the desired pre-tilt angle is from 2-15 degrees (column 1, lines 43-48, 47-58) which encompasses the claimed range of greater than 3.5.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have increased the ratio of exposure energy during the first polarized UV rays exposure to that of the second polarized UV rays exposure from 4:1 to 5:1, in the process of making the film of Gibbons, in order to provide the desired pre-tilt angle of greater than or equal to 3.5 effected by the exposure to the first polarized UV rays and the second polarized UV rays, as taught by Gibbons.

Gibbons fails to teach that the liquid crystal display has a contrast ratio greater or equal to 138 effected by the exposure to the first polarized UV rays and the second polarized UV rays.

However, Park teaches that the liquid crystal display device has a contrast ratio of 200-250, which is within the claimed range of greater than or equal to 138, and a pretilt angle of 4.5 (column 8, lines 61-66), which is within the claimed range of greater than or equal to 3.5, effected by exposure to polarized UV rays (light, column 7, lines 20-25), for the purpose of providing the desired display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided the liquid crystal display of Gibbons with a contrast ratio greater or equal to 138 as effected by the exposure to the first polarized UV rays and the second polarized UV rays, for a pre-tilt angle greater than or equal to 3.5 as effected by the exposure to the first polarized UV rays and the second polarized UV rays, in order to obtain the desired display, as taught by Park.

Regarding claim 9, Gibbons teaches that the substrates are rotated 90 degrees about the normal to the plane of reference (of the substrates), and the films on the substrates are exposed to a second polarized light (column 11, lines 60-70).

Regarding claims 10-11, Gibbons teaches that the angle of the exposure can be adjusted from about 0 to about 89 degrees (column 8, lines 35-45), which encompasses the claimed range of between 50 and 90 degrees relative to the reference plane, for the first exposure, and of between 50 and 80 degrees relative to the reference plane, for the second exposure.

Regarding claim 13, Gibbons teaches that the light source is a UV lamp, which is a non-electrode discharge-type since it is gas excited by a microwave source (column 10, lines 25-35).

(10) Response to Argument

1. Appellant argues that Gibbons teaches 16 cases, and in none of these cases does Gibbons describe a particular pre-tilt angle greater than or equal to 3.5.

The Board is respectfully apprised that the 16 cases taught by Gibbons are merely exemplary of what Gibbons discloses as being within the scope of Gibbons' invention. Gibbons teaches in the specification that the desired pre-tilt angle is from 2-15 degrees (column 1, lines 43-48, 47-58), which overlaps the claimed range of greater than or equal to 3.5.

2. Appellant argues that Gibbons fails to name a particular pre-tilt angle in its Summary of the Invention and Detailed Description, since the only place that Gibbons mentions a pre-tilt angle value is in its Background of the Invention, in which Gibbons generally states that known devices can have a pre-tilt angle of about 2-15 degrees.

The Board is respectfully apprised that Gibbons teaches that a pre-tilt angle is generated by the exposure method, but does not disclose a specific value except as correctly noted by Appellant in the Background of the Invention, where Gibbons teaches that most liquid crystal display devices have a pre-tilt angle within the range of 2-15 degrees, wherein a finite and uniform value is desirable for optimum performance (column 1, lines 37-47). In the Summary of the Invention, Gibbons teaches that one of the objectives of the exposure method is to provide the alignment, and the pre-tilt [angle] optically (column 2, lines 32-38), instead of mechanically (column 1, lines 25-30), for the purpose of providing the alignment and pre-tilt angle with improved uniformity (column 11, lines 1-5). Therefore, Gibbons teaches that the optical exposure

method provides a pre-tilt angle with improved uniformity over a method that uses mechanical means, wherein the pre-tilt angle has a finite value that is inclusive of one within the disclosed range of 2-15 degrees.

3. Appellant argues that as Gibbons fails to even discuss how an exposure energy ratio can effect a particular pre-tilt angle, that it would not have been unreasonable for one having skill in the art to assume, based on the teaching of Gibbons, that, in Gibbons' 16 examples, the pre-tilt angle is only about 2 degrees.

The Board is respectfully apprised that Gibbons has already identified the pre-tilt angle as being a variable that is effected by the exposure method (column 2, lines 35-38), and thus has identified exposure as a cause-effective variable. Thus, while Gibbons only teaches an exposure ratio of 4:1 in the examples, which effects a finite pre-tilt angle, Gibbons has disclosed that a pre-tilt angle of about 2-15 degrees is within the scope of the invention (column 1, lines 40-46), providing one of ordinary skill in the art with the means and hence the suggestion to change the exposure ratio, in order to obtain the desired pre-tilt angle of 3.5 degrees or greater, which is within the disclosed range of about 2-15 degrees.

4. Appellant argues that the examiner has used impermissible hindsight to allege that it would have been obvious to increase Gibbons' ratio to 5:1 to achieve a pre-tilt angle of 3.5 or greater.

The Board is respectfully reminded that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the

level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). As stated above, Gibbons has already identified the pre-tilt angle as being a variable that is effected by the exposure method (column 2, lines 35-38), and thus has identified exposure as a cause-effective variable. Thus, while Gibbons only teaches an exposure ratio of 4:1 in the examples, which effects a finite pre-tilt angle, Gibbons has disclosed that a pre-tilt angle of about 2-15 degrees is within the scope of the invention (column 1, lines 40-46), providing one of ordinary skill in the art with the means and hence the suggestion to change the exposure ratio, in order to obtain the desired pre-tilt angle of 3.5 degrees or greater, which is within the disclosed range of about 2-15 degrees.

Furthermore, even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See MPEP 2113. In the instant case, Gibbons has disclosed that a pre-tilt angle of about 2-15 degrees, which overlaps the claimed range of 3.5 degrees or greater, is within the scope of the invention (column 1, lines 40-46).

5. Appellant's arguments against the valid use of Park as the secondary reference is based on the valid use of Gibbons as the primary reference, and are addressed above.

(11) Evidence appendix

There is no evidence being relied upon by appellant in the appeal.

(12) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

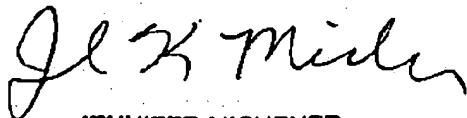
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Sow-Fun Hon.

Conferees:



JENNIFER MICHENER
QUALITY ASSURANCE SPECIALIST

Jennifer Michener



RENA DYE
SUPERVISORY PATENT EXAMINER
Tech Cetr 1700



Rena Dye 